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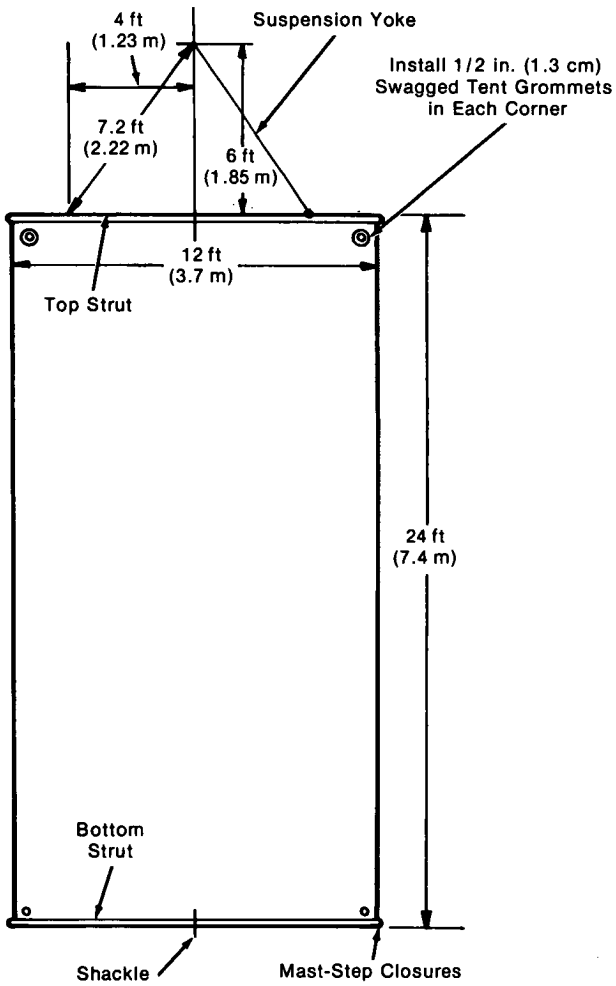
NASA TECH BRIEF

Marshall Space Flight Center

Simple and Effective Method To Lock Buoy Position to Ocean Currents



Note: Ballast weights are installed inside bottom strut and are contained with mast-step closures.

Window-Shade Drogue

The problem:

Drogues are used with drifting buoys to keep them moving with the current at a speed as close to that of the current as possible. In the past, conical sea anchors, parachutes, or crossed vanes have been used as drogues. The anchors and vanes are difficult to store, and parachutes are prone to fouling.

The solution:

A window-shade drogue has been developed with a drag coefficient of 1.93 compared to a maximum of 1.52 for previous drogues. It is remarkably simple to construct, use, and store.

How it's done:

The window-shade drogue is a rectangular piece of plastic sheet with horizontal support bars at the top and bottom. As shown in the figure, it is similar to a retractable window shade. A shade area of 288 ft^2 (26.5 m^2) has been found to be suitable for many applications.

The drogue is attached to the buoy by a yoke. Ballast weights can be fitted into the hollow bottom strut. Besides being more effective than previous devices, this yoke can be easily stored by rolling it up (as with a window shade), and its simple design should make it less expensive.

The drogue could be used with buoys to monitor river flow and ocean currents at varying depths. It might also be used to orient fishing nets with current and as safety equipment on small boats.

(continued overleaf)

Note:

Requests for further information may be directed to:

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Patent status:

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